

**REMARKS**

Claims 1-8 are all the claims pending in the application.

Claim 1 has been amended to delete the recitation of “only”. Claim 1 has been further amended to recite wherein the heat exchanger has a first end and a second end, whereby the first end of the heat exchanger being connected to the reactor and the second end of the heat exchanger and the bottom of the outer casing being fixed to each other by a flange of a low-temperature sealing material usually usable at a temperature of around 100°C, and a double piping having an inner tube and an outer tube for introducing a gas to be treated and for discharging the treated gas. Support for the amendment to claim 1 can be found in the specification, for example, on page 3, lines 13-21 and on page 14, line 12 bridging page 15, line 5.

No new matter has been added, and entry of the amendments is respectfully requested.

**I. Claim Rejection under 35 U.S.C. § 112**

Claim 1 is rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Examiner asserts that claim 1 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner asserts that by using the claim language “only”, Applicants are presenting a limitation that was not disclosed in the specification as originally filed.

Without acquiescing the merits of the rejection, claim 1 has been amended to delete the recitation of “only”.

Withdrawal of the foregoing rejection of claim 1 under 35 U.S.C. §112 is respectfully requested.

**II. Claim Rejections under 35 U.S.C. § 103 (a)**

Claims 1, 2, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable in view of Christensen (US 3,041,151) in view of Minet et al. (US 4,692,306).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen (US 3,041,151) and Minet et al. (US 4,692,306), and further in view of Keto et al. (US 3,732,517).

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen (US 3,041,151) and Minet et al. (US 4,692,306), and further in view of Serratore et al. (US 3,278,633).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen (US 3,041,151) and Minet et al. (US 4,692,306), and further in view of Nakamura et al. (US 3,814,171).

Applicants respectfully traverse the above rejections.

Claim 1 recites that the heat exchanger has a first end and a second end, whereby the first end of the heat exchanger being connected to the reactor and the second end of the heat exchanger and the bottom of the outer casing being fixed to each other by a flange of a low-temperature sealing material usually usable at a temperature of around 100°C, and a double piping having an inner tube and an outer tube for introducing a gas to be treated and for discharging the treated gas.

By fixing the heat exchanger and the bottom of the outer casing each other by a flange, as recited in the present claims, the flange is to be laid at the heat exchanger's outer size at least

away from the reactor. As a result, the flange part can be prevented from overheating and a sealing material composed of a normal low-temperature construction material can be used for the flange.

Christensen discloses a reaction apparatus wherein the second end of the heat exchanger and the bottom of the outer casing are fixed each other by a flange (baffle). However, Christensen does not disclose or teach preventing the flange part from overheating and thereby using a sealing material composed of a normal low-temperature material for the flange.

Minet does not make up the above noted deficiencies of Christensen.

Minet discloses a reaction apparatus wherein various components are secured to the bottom of the reactor outer shell. However, Minet discloses that the catalytic reaction apparatus is designed with easily removable components for ease of maintenance and access to catalyst, burner as its advantages. Column 7, lines 9 to 11. Minet discloses that the apparatus is designed so that each primary wall means is free standing, self supporting and fixed only at one end, thereby minimizing thermal stresses during the thermal expansion (at column 7, lines 11 to 15). However, Minet does not disclose or teach that the apparatus prevents overheating of a flange and thereby enables the use of a sealing material composed of a normal low-temperature construction material for a flange.

None of the other cited references, Keto and Serratore and Nakamura, either alone or in combination, makes up the above noted deficiencies of Christensen and Minet.

In view of the above, it is respectfully submitted that the present claims are patentable over Christensen in view of Minet, Keto and Serratore and Nakamura, and withdrawal of the foregoing rejections under 35 U.S.C. 103(a) is respectfully requested.

### III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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